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ABSTRACT

The French-based Programme on Educational Building exists to promote cooperation between participating member countries on aspects of educational building policy and practice of common interest. The articles in this issue describe a few of the many and varied applications of information technology for greater efficiency in running schools. Brief descriptions of computer software, names of contact persons, and some graphics are provided on the following topics: (1) school administration and management in Australia; (2) a computer-based register of school premises in Sweden; (3) the Cambridge Property Utilisation System (CAMPUS) in the United Kingdom; (4) project scheduling in Australia; (5) computerized timetabling using pc-UNTIS in Austria and France; (6) a symbol library for kitchen planning in the United Kingdom; and (7) building management systems in France. Also cited is the availability of several recent publications. Notice of forthcoming international seminars on school buildings and publications available from past seminars conclude the journal. (MLF)

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PEB

MARCH 1989/NUMBER SEVEN

ORGANISATION FOR ECONOMIC COOPERATION AND DEVELOPMENT
2 RUE ANDRÉ-PASCAL / 75775 PARIS CEDEX 16

In this issue

Using computers in building management

ED305751

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- Using computers in building management
- School administration and management
- A computer-based register of school premises
- CAMPUS
- Project scheduling
- Computerised timetabling
- A symbol library for kitchen planning
- Building management systems
- Documents received
- News from PEB

Information wanted

As part of the 1989 work programme PEB will be asking a consultant to document current applications of computer technology to educational property management. Anyone who has used or developed software in connection with the planning, maintaining or managing of schools, or other educational buildings, and is willing to share his experience with others, is invited to write to the PEB Secretariat. What we are looking for are brief reports on the nature of the software, its cost and complexity, the hardware needed to run it, the uses to which it has been put, and its advantages and disadvantages. These reports are not for publication, but will be passed on to our consultant to help in the study. The franker you can make them, the better.

Using computers in building management

Computers, and especially microcomputers, are making themselves useful in more and more areas of our lives. The management of educational buildings is no exception. The articles in this issue of PEB Exchange describe just a few of the many and varied applications to which information technology has been put in the search for greater efficiency in running schools. They vary from very specialised to quite general, from simple to highly sophisticated, from well-established to still under development.

What lessons are to be learned from our experience of using computers to carry out management tasks? A meeting of experts, organised by PEB in June 1988, attempted to answer this question. Their conclusions will be published in full later this year, but one thing can be said straight away. In this field particularly, the informal exchange of information and experience between those involved in creating and using new ideas, can be of enormous value. That is the reasoning behind the present issue of PEB Exchange, but in the future too we hope to be able to include news of other developments.

As well as information, PEB Exchange also offers you the opportunity to ask questions, or to seek help. If you face a problem in the educational building field and would like the advice of others who may have faced similar problems, you have only to write to us explaining what the question is. Your appeal for help will be published in PEB Exchange.

Our next issue will be devoted to the use – or re-use – of existing buildings for educational purposes. This might be the conversion of a historic building, such as a monastery, into a school, or the modernisation of an existing school, or the adaptation of redundant office space to educational use. We welcome contributions from readers to PEB Exchange. Articles or items for inclusion should be addressed to the PEB Secretariat and should be written in English or in French. If you are not confident of your ability to write in one of these languages, do not be discouraged: we can edit your text if it is necessary. Please include illustrations, either black-and-white photographs or line drawings. The deadline for contributions is 30 April.

EA020888

The Programme on Educational Building exists to promote co-operation between participating Member countries on aspects of educational building policy and practice of common interest. Articles from 'PEB Exchange' may be freely reproduced provided the source is stated.

School administration and management

ACT is the Australian Capital Territory, centred on Canberra. In addition to widespread use of computers in education, new technology there is contributing to the administration and management of schools.

School administration computer system

The ACT Schools Authority has a networked administrative computer system. All schools are connected to the central computer in the administrative offices through multiplexes which manage access and the flow of information. Each terminal can operate as a free-standing microcomputer to enable schools to undertake their own management tasks. The connection to the central mainframe computer enables a direct link to be made to the Authority's central library and other information services, and enables the Authority to monitor staffing and facilities directly, as well as to collect statistics. Eventually the system will be used for electronic mail and other management services.

Building management systems

The Authority is responsible for 170 buildings with a total floor area of 590 000 m^2. The properties include a wide range of buildings from small pre-school facilities to large and complex secondary colleges of some 12 000 m^2 in area.

A programmable logic controller (PLC) has been installed in a number of primary schools since 1981. PLCs can be programmed to initiate specified actions at given times, or in response to certain stimuli. For example, a PLC can act as a master clock for operating period bells, and for controlling lighting after normal opening hours; it can also activate fire and burglar alarms when smoke or intruders are detected.

Although PLCs also have a use in operating heating and cooling systems a more advanced energy management system can be achieved with a Direct Digital Control (DDC) system. DDC provides for microprocessor-based control of heating, ventilation, air conditioning and other devices. The system can monitor the operation of building services and make adjustments in response to changing conditions. The equipment can be monitored 24 hours a day from a remote supervisory station, which can alert maintenance authorities in the event of a malfunction. It is therefore possible for breakdowns which occur outside school hours to be rectified before the start of the following day's classes.

DDC systems have been installed at four secondary schools. Experience so far shows that the cost of the equipment can be recovered in energy savings within two years.

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A computer-based register of school premises

The need for a stock register

The city of Västerås in Sweden is in the process of creating a property management system which will include all the different premises owned by the municipality. Part of this work is a project which aims to improve the overall utilisation of school premises.

To this end a detailed inventory has been made of the functions and capacity of the premises of every school in the municipality. This inventory will have to be continually updated if it is to be of use in the long-term planning of the provision of buildings.

Each year about 200 million Skr is budgeted in the municipality for the administration of the stock of property. School buildings account for about half of this sum. It is noteworthy that the share of running and maintenance costs in the total has tended to increase rapidly. It is therefore increasingly important that the stock is managed as rationally as possible. If this is to be achieved, a stock register which can serve as a common and uniform basis for planning is an absolute prerequisite.

The project

The project explores user needs, long-term and short-term, from three points of view:

- that of the department of the municipality responsible for schools, and of headteachers, (educational space requirements);
- that of the property department (management and maintenance);
- that of the Council as a whole (building programme).

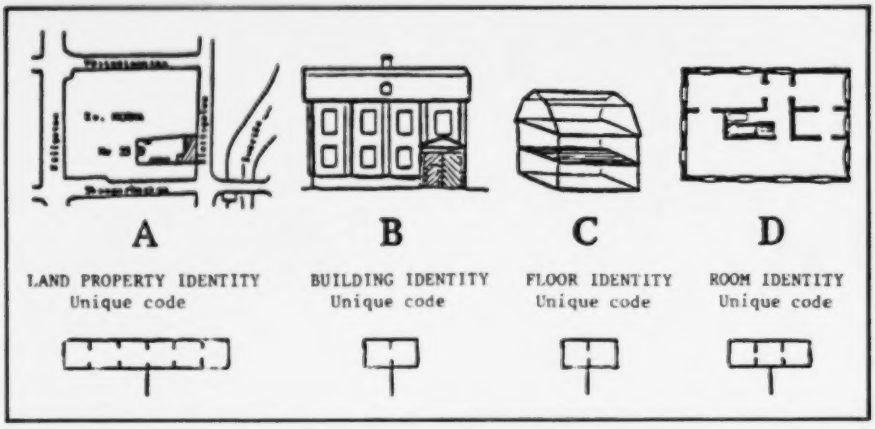
In addition, account will also be taken where appropriate of the needs of the pre-school department and of the recreation department.

The sheer amount of information which is involved, suggested that computer support would be necessary. The desirability of making the register available simultaneously to different users for different purposes confirmed this perception. It also underlined the importance of clarifying user needs.

Property identification code

The identification code is a fundamental element of any information system for property and buildings. It is essential that the code is consistently employed by all users of the information system. It has four components:

- the basis is the code which identifies the land which makes up the property, and which in Sweden is the joint responsibility of the municipality, the county, and the Central Board for Data on Property (A);
- the next stage is the assignment of a unique code for each building on the property (B);
- the third stage is a code for each floor of the building (C);
- the final stage is the identification of individual rooms in the building (D).



Conclusions

The inventory project confirms the need for a register of educational premises, shared by the user departments, and where the necessary information can be stored, updated and retrieved, quickly and easily. The number of routine administrative tasks which have a potential use for such a register, thirty-five in all, many of them with similar data requirements, underlines the importance of co-ordinating the information.

These thirty-five tasks will not be computerised simultaneously. Priorities can be identified, taking as the criterion of urgency the estimated savings that an adaptation to automatic data processing would bring. In property management the most suitable candidates are maintenance and cleaning; in the school department space planning and space utilisation are seen as the priorities.

The computerised register should be built up step by step and in such a flexible manner that different users may easily be connected to the system as it grows.

Three types of information need to be handled:

- alphanumerical, e.g. tables and spreadsheets;
- graphical, e.g. drawings and plans;
- text only, e.g. documents.

The property identification code must uniquely identify every property, building, floor and room in such a way that similar registers from other municipalities could eventually be linked together on a single system.

Every user has to take responsibility for updating his part of the register. To protect the database a system of user codes is needed to enable authorised access for this purpose. Thus every user will be able to read from any part of the system, but only alter the part for which he is responsible.

Finally it should be stressed that the register is intended to be an integral part of a property information system for the whole municipality.

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CAMPUS

What is CAMPUS?

CAMPUS is the Cambridge Property Utilisation System, a management tool developed during 1986 by the staff of the Property Department of Cambridgeshire County Council in England, to help achieve effective use of a portfolio of property valued at some 1.6 billion pounds sterling. This extensive portfolio includes the premises and land needed for all County Council services, but the greater part of it comprises school sites and buildings.

What was it meant to do?

The intention of CAMPUS was fourfold:

- to provide an interactive management information system (including text, financial data, pictures, plans and maps) which could be used on the Council's network of IBM computer terminals and PCs;
- to simplify and speed up the input of certain types of complex and repetitive information by the use of laser scanners;
- to provide easy access to the Council's property records through a database of key facts needed by managers responsible for the use, development or maintenance of property;
- to develop specialised applications for specific purposes.

What has been achieved?

The first objective has almost wholly been achieved, but full integration with other financial programmes awaits the development of a new financial system for the Council. Meanwhile the property maintenance ordering and accounting system is temporarily operating on its own.

Input of text and pictures has been successful, and a method has been developed for altering drawings and maps which have been scanned and input to the computer. A technical difficulty has arisen with the scanning of very large maps which has yet to be resolved. In the meantime, digitised

Ordnance Survey maps of the county are becoming available. A scanning facility will continue to be needed in future for inputting local records and maps.

Although difficulties had been foreseen, the third objective was the easiest to achieve, and agreement was reached on a "core" of information in 1986. The database has now been established, for all properties, and includes: address, size, use, grid reference, and information about acquisition, disposal and transfer. Basic construction details, room sizes, maintenance costs and other information are held as appropriate. This "core information" approach follows the recommendations of the report of a PEB experts' meeting in 1985.*

Finally, some progress has been made with specialised on-line applications in areas such as rents and leases, mobile accommodation, and property maintenance (this last is being made available, in a limited way, to property bursars in schools). A number of other applications are available, on the management of staff housing, energy management, grounds and garden maintenance, school capacities, and capital programme management. These have often been developed on personal computers prior to transfer to the CAMPUS mainframe system.

* *Copies of the OECD/PEB report, Towards a Core Information System, Paris 1986, may be obtained from the PEB Secretariat.*

How widely is it used?

The property database is accessible from terminals connected to the mainframe at the County Council offices, and also at three of the schools where property bursars are based. The maintenance application is used to generate and monitor all orders and to manage budgets. Although the CAMPUS system is widely available, it has to date been used by a relatively limited number of staff, mostly within the property department. Use will expand considerably as the microcomputer-based applications described above are transferred to the mainframe, and the number of plans and maps available on the system increases. At present the plans of about 100 of the County's 400 schools, plus a similar number of plans of other properties, are stored on the graphics module.

What next?

The County Council is planning to devolve property maintenance to schools as part of its introduction of local financial management, following recent legislation and the success of a three-year pilot scheme. Thirty remote terminals will be installed at the large secondary schools where property bursars (each of whom will serve a group of schools) will be based; and these will be linked to the other schools served by the property bursar. Such a plan depends for its success on the extension of the County Council computer network to the selected schools, and on the availability on CAMPUS of improved information on the condition of the buildings, and details of programmes of planned maintenance and improvements. Work has already started on this.

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Project scheduling

Manual methods of forecasting fees, cashflow and time schedules for an annual capital building programme where a large number of individual projects are involved can be excessively time-consuming. Researchers in Western Australia have been working to develop a management tool which will overcome this problem, which confronts a number of organisations concerned with building management. The application which they have developed is suitable for use on IBM-compatible personal computers, and is intended to be used by personnel with limited computing knowledge.

Taking as a basis the relational database "Paradox", a simple menu-driven program was written which would allow project calculations to be derived. It was envisaged that, given a minimum of information, the program should present a broadbrush prediction of project schedules and cashflows, rather than a detailed account-keeping system.

In essence the program, named "Projshed", consists of:

- an empty database table, complete with screen and report displays, to provide the seed for database creation and report output;
- a number of sub-programs which control the menus and the creation, viewing, updating and reporting of database tables.

All commands are executed by menu selection or by screen prompts. Each new menu is accompanied by an appropriate explanation of the menu or command. Entry to "Projshed" can be protected by a password.

Separate tables can be created for overall project management, and for each of the different professional practices (architectural, mechanical, electrical and structural). A separate table is generated for each financial year. Users can also create their own tables.

Basic data which has to be put in includes total project cost, and target start and finish dates, and other data can be incorporated if available. The program responds flexibly by producing as complete an answer as possible given the data available. Using formulae it can calculate and display in a graph, for example, milestone dates and times for the various phases of the project, total monthly fees and total cashflows. The illustration shows an example of a graph generated by "Projshed".

To use "Paradox" and "Projshed" satisfactorily an IBM-compatible personal computer (PC) with at least 10 megabytes of hard disk storage, one 360 kilobyte floppy disk drive and 640 kilobytes of random access memory is required.

Work on this research project is almost completed. The instruction booklet which goes with the program will be accompanied by a slide and tape presentation.

Contact:

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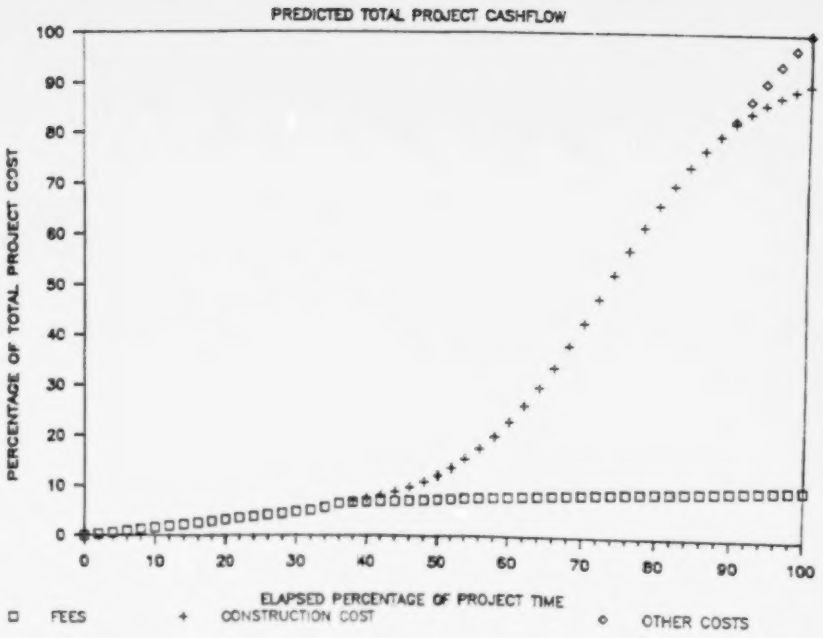


Computerised timetabling

Introduction to pc-UNTIS

pc-UNTIS is a programme developed in 1984 which is designed to help with the preparation and reworking of school timetables. It is at present available in English, French, Finnish, German, Italian and Swedish versions. It will run under MS-DOS on IBM-PCs and compatible personal computers.

The user has to input a certain amount of master data: about teachers, classes, subjects and rooms. This data would tell the computer, for example, how many teaching periods there are in the school week, the sizes of rooms and which ones are available when. Then the computer has to be told what other conditions there are on timetabling - for example that teacher A is unavailable on Tuesday mornings, that younger classes should only have afternoon lessons two days a week, or that history should be taught in room B whenever possible. To each of these conditions can be attached a degree of importance. The program can then be set in motion to calculate the timetable which best meets all these conditions. This can be done on several different levels, on a scale from 1 to 9. For example the compilation of a timetable for a school having thirty classes takes about twenty minutes at level 3; a more intense optimization can triple the time needed but will produce a significantly improved result, especially where the structure of the timetable is complicated.

Existing timetables can be used as the basis for new ones and it is also possible to produce partial timetables. Information can be displayed and printed in a wide range of different ways. Having produced a timetable the program can itself check that all necessary conditions have been met. For further information about pc-Untis, write to:

Gruber & Petters Software
Wolfikstrasse 32
A-2000 Stockerau, Austria

pc-UNTIS - a user's view

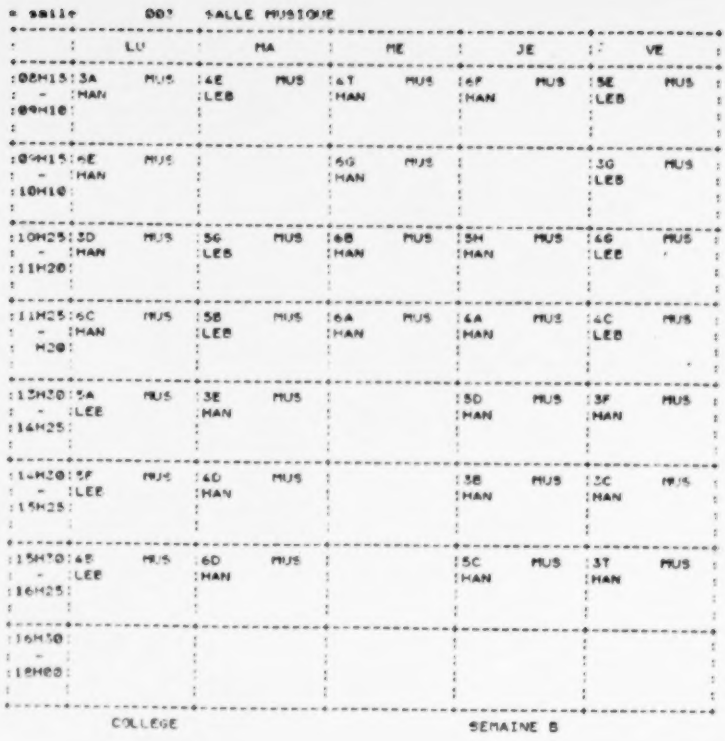
For the headteacher and his team the preparation of the school timetable remains a crucial problem which has to be resolved each year. It is an important task which demands a great deal of time and careful thought on the part of specialists who often dedicate a part of their summer holidays to it. A well-constructed timetable can make a substantial contribution to the quality of school life. The French system is characterised by teaching areas which are frequently insufficient in number and in size, and by a teaching force whose teaching duty, in secondary schools, vary between fifteen and twenty-two periods per week. Achieving a satisfactory balance of general and particular interests can be as difficult as squaring the circle.

In the electronic age, we can however entrust this work to the microcomputer, whose power has grown to the point where it is able to manage such a complex planning task.

A number of software packages are appearing on the European market, but pc-Untis remains the only one capable of handling the mass of data (sometimes as many as 500 000 items) which is typical of educational establishments. The program is notable for its user-friendliness, its algorithmic power, and its great flexibility which allows it to be adapted to any educational system. Nonetheless, anyone who is using a computer to draw up the timetable must bear one thing in mind:

the program handles data which relate to a system which must be the object of a careful in-depth analysis if it is to be formulated in a coherent way which can be understood by the machine. For it is from this coherent description of the system which depends the quality of the timetables proposed by UNTIS.

New users of the program should therefore be methodical in their approach: the wisest course would be to begin thinking about the problem at the very beginning of the school year. On the other hand, once the program has been mastered, results which are superior to those which it would be possible to achieve "by hand" are obtained. The output of copies and extracts is simply done, and the speed with which different optimal conditions can be tested allows the user to develop flexible individual timetables which better reflect the biological rhythms of adolescents. It can also provide a rapid solution to timetabling difficulties caused by the absence of a certain number of teachers, or by the need to accommodate a special project. Moreover the program has a use in space management: by minimising the time that rooms are in use for lessons it can contribute to savings in heating and lighting costs, or can identify periods when space would be available for other activities run by the local community for example.



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08H15 - 09H10	3A MUS HAN	4E MUS LEB	6T MUS HAN	6F MUS HAN	5E MUS LEB
09H15 - 10H10	4E MUS HAN		5G MUS HAN		3G MUS LEB
10H25 - 11H20	3D MUS HAN	5G MUS LEB	6B MUS HAN	5H MUS HAN	4G MUS LEB
11H25 - H20	6C MUS HAN	5B MUS LEB	6A MUS HAN	4A MUS HAN	4C MUS LEB
13H20 - 14H25	5A MUS LEE	3E MUS HAN		5D MUS HAN	3F MUS HAN
14H20 - 15H25	5F MUS LEE	4D MUS HAN		3B MUS HAN	3C MUS HAN
15H30 - 16H25	4B MUS LEE	6D MUS HAN		5C MUS HAN	3T MUS HAN
16H30 - 18H00					

COLLEGE SEMAINE B

Informatics are invading the school. We need to maintain the closest possible links with technological advances in order to benefit the quality of education. An excellent timetabling program is a part of this requirement.

Contributed by:
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A symbol library for kitchen planning

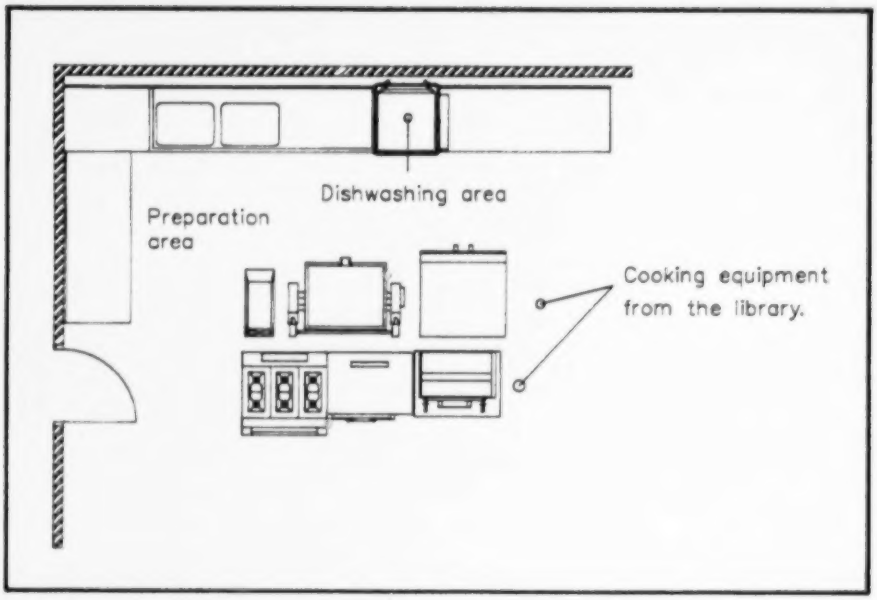
This article, which describes a very specialised application of computer technology to facility planning, illustrates the gains in flexibility that such developments can bring.

The Department of Food and Catering Services at Sheffield City Polytechnic, in the United Kingdom, includes facilities planning and kitchen design in its undergraduate course in Catering Systems. Catering designers are employed by hotel and catering companies, catering equipment manufacturers and distributors, and consultants in the hotel and catering business. A number of people in these industries are already using computer aided design (CAD) or are considering its use. CAD users claim great increases in productivity, not so much from savings in time in the production of initial drawings, but from their ability to edit and rescale drawings, and to re-use the same basic drawing to produce a number of variations. They confirm that CAD is likely to have a major impact on kitchen design.

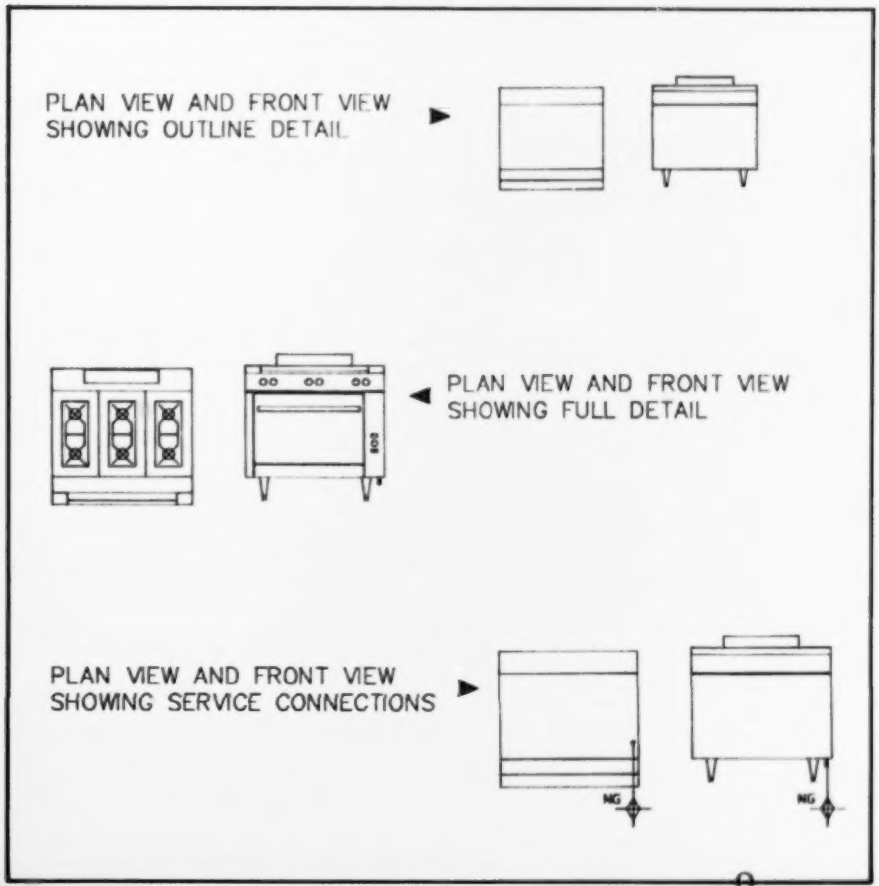
In considering how to integrate CAD into the Catering Systems course, it became clear that although it had many advantages, there was a problem in the diversity of catering equipment, which has little standardisation of dimensions. When CAD is used in other fields it is common to develop a library of symbols of regularly used items of equipment for insertion into drawings. Because of the diversity of catering equipment each designer needs an extensive library, which it is time-consuming to create. An alternative approach is to use symbols provided by manufacturers. However, unless manufacturers develop a common standard for drawing, and for representing service connections, together with a naming convention for the symbols, life can be very difficult for the designer. One way round this problem is to have a library of catering equipment from a number of manufacturers in the form of CAD symbols which can be made available to catering designers. The Polytechnic therefore explored the possibility of developing such a symbol library in collaboration with leading equipment manufacturers in the United Kingdom. The first stage was to discuss the necessary attributes of the library with

a number of CAD users, and from these discussions the following characteristics were derived:

- symbols should be two-dimensional and give information in both plan and front view;
- information should be held in such a way that it is possible to draw either simple outlines (at 1:100 or 1:200 scale), or to plot appliances in greater detail (at 1:20 or 1:50 scale);
- gas, water, electricity, steam and drainage connections should be identified;
- it should be possible to extract technical information from a drawing and transfer it to word-processing or spreadsheet programs to facilitate production of lists of parts, service schedules and so on;
- the method used to name symbols should allow them to be sorted and located by manufacturer or by type. It should be possible to select equipment using on-screen menus or digitiser tablets;
- the library should be compatible with other libraries used by architects.



The library, known as CATERCAD, has now been developed. An example of a typical symbol is given in the figure, which shows the different levels of information available. Because all items of equipment in the library are drawn to the same standards, it is possible to combine items of equipment from different manufacturers in the same plan. A typical kitchen drawn using the library is shown.


PLAN VIEW AND FRONT VIEW SHOWING OUTLINE DETAIL
PLAN VIEW AND FRONT VIEW SHOWING FULL DETAIL
PLAN VIEW AND FRONT VIEW SHOWING SERVICE CONNECTIONS
HG
HG

The development of the symbol library coincided with work being carried out for the UK Department of Education and Science on the development of adaptable teaching kitchens in colleges of further education. Such kitchens do not have fixed equipment but are provided with adaptable services. Typically, water, gas and electricity are brought in through overhead service booms and drainage is provided through screw-in floor connections. This approach allows catering departments to simulate a wide range of different types of catering, from fast food to formal restaurant dining, without the need for expensive, dedicated specialist provision.*

Using the symbol library a plan, showing the location of gas, water, electricity and drainage, can be developed on the computer. The available equipment can then be manipulated around the screen and suitable layouts chosen. Since the symbols for all pieces of equipment show their service requirements, it is easy to check that suitable services are provided in the right places.

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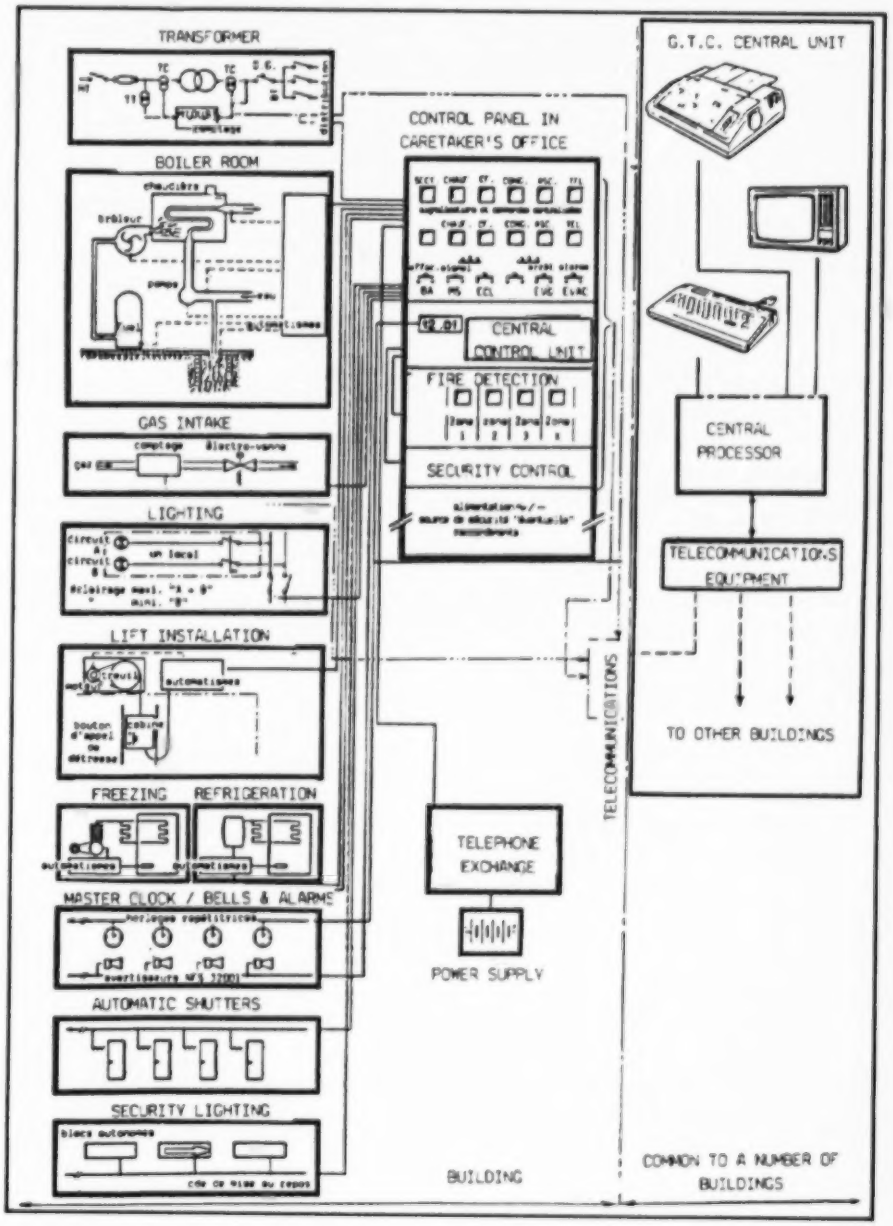
* *see Documents Received for more on this approach.*

Building management systems

In France, as in other countries, computer-based building management systems, although widespread in the industrial world, have yet to make much impact on schools. A system of GTC, as it is known, (from Gestion Technique Centralisée - literally 'centralised technical management'), has however been installed in the innovatory 'lycée of the future' at Jaunay-Clan near Poitiers and such systems clearly have potential for the future. The following article, based on one which appeared in Constructions scolaires et universitaires, 14, Sept./Oct. 1988, published by the Centre de Conseil Technique aux Collectivités Territoriales (CCTCT) of the French Ministry of Education, answers some questions about GTC systems.



What is GTC?

GTC is a system whose purpose is to ensure the automatic functioning of a building in optimal technical and economic conditions. It consists of at least two distinct parts: one or more local posts and a central unit, linked by a communications network. The local post is said to be "intelligent" if it has a micro-processor enabling it to operate independently. The central unit controls, surveys and gathers information on all the technical installations in the building. It can be linked through the telephone system to other computers in other buildings.

What benefits can one expect from GTC?

In brief, a permanent reduction and optimisation of running costs. This will arise in two main ways: firstly through a more rational use of energy, as the operation of heating and other systems is adapted more closely to the utilisation pattern of the building; and secondly through a more effective way of running and maintaining the building, due in no small part to the much improved flow of information about the different installations.

How can GTC be adapted to the needs of building users?

The essential thing is that the client, the user of the building, the architect and the builder work together as a team. The prime role of the users is to identify what will be expected of the GTC system at the outset and as the building evolves and is adapted in use, and the responsibility of the professionals is to ensure that the system meets those requirements.

What of the future?

A true GTC system will be so constructed that it can evolve with the building. It will need to be "user-friendly" – that is to say, able to be

used by people with no knowledge of computing. A building management system is like a human being insofar as it has a birth, a period of growth and adaptation to its surroundings, a period of maturity when it will be in constant interaction with its environment, and a period of aging before it will be replaced by a newer technology. Whatever further technological advances the future may bring it is clear that GTC systems must be integrated into the building from the design stage, and that they will become indispensable in new buildings, whatever their size.

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Documents received

A building management methodology

Faced with a vast programme of repair and maintenance work, the Département of the Moselle, France, has developed a methodology to enable it to establish priorities for immediate action. In 1986 the Département inherited from the State responsibility for the collèges (schools for 11-16 year-olds) in its territory. The first step was to make an assessment of the condition of each of the 94 collèges. Each element of the buildings was categorised according to its condition from A (good) to D (needs immediate replacement). The total cost of the work which was identified as necessary far exceeded the budget available to the Département, which had to reach decisions about how to proceed. How much money to spend? in which years? and in which schools?

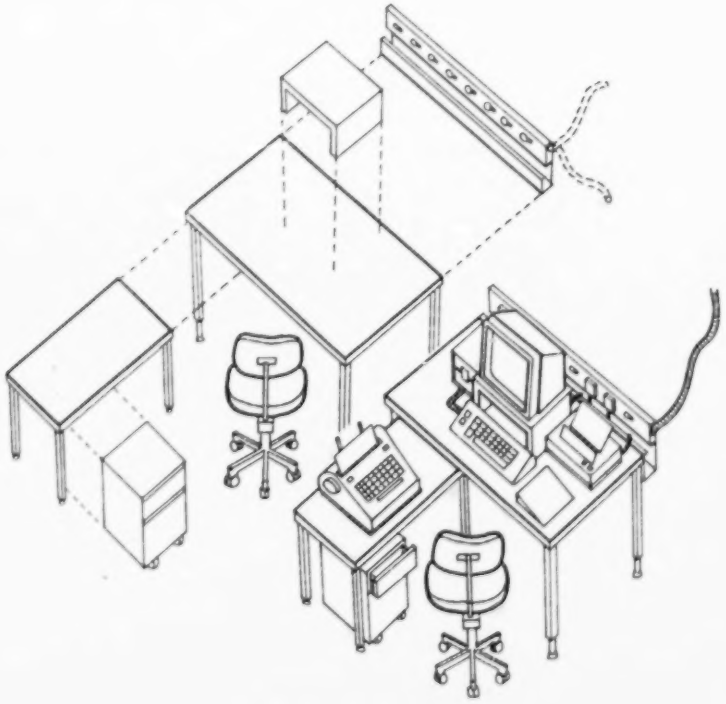
To help in this process an indicator was devised which allows the effect of different investment policies to be compared. The key to the method is the notion of 'potential'. The potential of a building element, a roof, for example, or a boiler, is defined as its total cost, multiplied by a factor which is obtained by dividing its remaining life by its original life expectancy. Thus the potential in 1989 of a roof which was replaced in 1979 at a cost of 30 000F, and had a life expectancy of 30 years would be:

30 000 x 10 : 30 = 10 000 F

By calculating the potential of each building element, adding these potentials together, and dividing by the total cost of replacement of all the building elements one obtains a percentage figure which expresses the potential of the building as a whole. The potential of a building just delivered would be 100%; and the figure would reduce as the building approached the end of its life cycle.

Once one has established the potential of the stock as a whole at a given moment this method of potentials can be used to compare the impact of different maintenance strategies. How much would need to be spent to maintain the potential at its present level? how much to improve the potential by 10%? and how much to bring it up to 100%?

Une méthodologie pour la gestion technique des patrimoines scolaires: l'exemple de la Moselle (ISBN: 2 11 805955 5) is published by the Centre de Conseil Technique aux Collectivités Territoriales, Ministère de l'Education Nationale, 110, rue de Grenelle, 75357 Paris CEDEX 07.



An illustration from ***Building Bulletin 64*** *showing how modular furniture allows free combination of different types of workstation.*

Adaptable facilities for post-compulsory education

A series of three reports dealing with three different aspects of facilities for further education has been produced by the Architects and Building Branch of the Department of Education and Science in London. *Building Bulletin 64*, "Adaptable facilities in further education for business and office studies" (£3.95); *Building Bulletin 65*, "Adaptable teaching kitchens in further education" (£5.50); and *Building Bulletin 66* "Adaptable facilities in further education for accommodation studies" (£4.95) are all available from HMSO, PO Box 276, London SW8 5DT, United Kingdom.

Going Dutch

Schooldomein is a newsletter about school building produced by ICS - Informatie Centrum Schoolgebouwen - in Rotterdam. It is available only in Dutch and will be issued 8 times a year. The annual subscription is 89 Guilder. Those who can read Dutch will find it a fascinating and useful source of information. For further information, write to:

R.H.Coops, ICS, Weena 720, Postbus 20720, 3001 JA Rotterdam, The Netherlands.

News from PEB

The adaptability and flexibility of specialised educational facilities

The Programme on Educational Building, in association with the Department of Education and Science, Leicestershire County Council and Leicester Polytechnic, will hold an international seminar on the adaptability and flexibility of specialised educational facilities from 18th-22nd June 1989 in Leicester in the English Midlands.

More than ever, school buildings have to be able to cope with the changing demands made on them. Adaptability and flexibility are qualities which are increasingly sought after. But how can they be achieved, at reasonable cost, especially in the provision of expensive specialised facilities? The seminar will try to identify appropriate degrees of adaptability and flexibility; discuss how they can be provided economically; and consider the human and organisational factors involved in making use of them.

If you would like to know more about the seminar please get in touch with: Richard Yelland, PEB Secretariat, OECD, 2, rue André-Pascal, 75775 Paris CEDEX 16, France.

International meetings

An international congress on "Managing and financing education and buildings - research, implementation and practice" is to be held in Rotterdam, the Netherlands, from 28th May to 1st June 1989. The congress is

This former physics lecture theatre converted into a computer room illustrates some of the issues to be discussed at the PEB seminar in Leicester in June.

intended for those responsible for managing large building stocks in both the public and private sectors. The "Londo" resource allocation system developed for primary schools in the Netherlands will be one of the subjects under discussion.

Contact:

The Secretariat, Congress on managing and financing education and buildings, Coolsingel 67, 3012 AC Rotterdam, The Netherlands.

SCOLA '89, European School Exhibition, will take place in Rennes, France from 2nd-8th November 1989. Its theme will be European education, from kindergarten to the end of secondary school. Meetings, discussions and exhibitions on the educational questions facing Europe are planned.

Contact:

Promo 2000 Ouest, 1, place Honoré-Commeurec, 35000 Rennes, France.

Two recent Symposia were conducted by the Ohio State University on the theme of "Preserving a quality environment for learning". The richly-illustrated publications from the Symposia may be obtained free of charge by writing to:

John R. Kleberg, Assistant Vice-President, The Ohio State University, 190 North Oval Mall, Room 108, Columbus, Ohio 43210-1362 U.S.A.

The views expressed in PEB Exchange are the contributors' own and do not necessarily represent those of the OECD Secretariat.